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ON THE UNITY OF POISON

In Diseases heretofore usually considered to be Separate and Entirely Distinct; or the Evolution of one from another, apparently quite different, and of many Diseases—seemingly all different—from One Unity or Common Origin.

BY

DR. G. DE GORREQUER GRIFFITH,

Founder of, and late Senior Physician to, the Hospital for Women and Children;

Lecturer on Diseases of Women and Children at the Zenana and Medical Mission Training School for Ladies;

Consulting Physician to the Hounslow Hospital.

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"To a mind coming freshly to these subjects, the numbers (facts) with which scientific men habitually deal, must appear utterly fantastical; and yet, to minds trained to the logic of science, they express most sober and certain truth."—TYNDALL.

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† Reprint from *Midland Medical Miscellany*.

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"*The mystery is before us; the power of solving it * * * in our minds.*"—PAGET.

BEING one of the school which holds the *de novo* origin of disease, I am glad to read in your journal of March 1st, '83, in your review on Dr. Meredith's Annual Sanitary Report (page 82) the following:—"An outbreak of typhoid gives matter for consideration. It would clearly appear from the history of the cases reported by Dr. Meredith, that certain insanitary conditions had a distinctly germinating effect upon zymotic diseases; for the first case occurred in an isolated farm house which had been infected some three years previously. Dr. Meredith's conjecture is, that 'some soiled articles of clothing and furniture from the previous illness got disturbed when the family were removed to a new house:' but, while this may be the case, the lapse of three years is a significant fact; the very low specificity of typhoid is an argument not entirely without force against Dr. Meredith's view, and in favour of the *de novo* origin.

"The second case is noticable as being associated with very insanitary conditions, and of unascertainable origin; while *there were cases of severe diarrhœa among the occupants of these houses* AT THE SAME TIME.

"A further source of interest is an account of outbreak of 'diphtheria,' or diphtheric sore throat. On this Dr. Meredith remarks:—'The history of the first case is rather obscure, whether imported from without, or developed by insanitary conditions, it is

difficult to say'—but he was unable to trace any communication between it and any other case; the house where the child resided had one very serious sanitary defect—its w.c. was particularly offensive on account of the escape of sewer air into it. *Other persons in the same house suffered from illness of a blood poisoning character.*"

All the foregoing is a clear and very distinct confirmation of my views on Unity of Poison and Differentiation of Symptoms, *i.e.*, results and manifestations of the evolutions and workings of the one poison—a doctrine corroborated by Dr. Braxton Hicks, Dr. Playfair, Sir Joseph Fayrer, Dr. Fordyce Barker, of the United States, and Dr. Sansom, and now many very eminent physicians, at home and abroad.

"Dr. Meredith's statement (is) that in almost every case where he was able to make inquiries, he found the cause to be "contact with previous cases" (the orthodox forms of disease of which I have written in the *Glasgow Med. Journal* of 1882) "or exposure to sewer air, or to offensive odours of a similar nature." Such cases as the latter I have called toxæmic, being clearly due to toxæmia other than that set up by contact with a previously infected person or thing, and being evidently of *de novo* origin.

"As an example of this class, he writes:—'In another instance a young woman was found suffering with diphtheric sore throat. She denied all contact with persons suffering from such illness. Her house was visited, and at once a strong sickening smell of *decaying potatoes* was noticed. The family stored their potatoes in a corner of their dwelling. The house being one of those not capable of thorough

ventilation, the insanitary condition was aggravated; it could not be discovered that it was exposed to direct sewer air."

This bears out my doctrine of unity, and differentiation resulting from differences, not in the original poison, but in the site where it may be implanted, as well as from the evolution and development of the *origo mali*, because of inherent force — doctrines which are countenanced now very generally.

"Of no less moment," your reviewer continues, "is another phenomenon mentioned by Dr. Meredith: 'The cases of diphtheria observed in November and December were of a mild nature, and became intermixed with cases of mumps. In a house in the north of the town, occupied by a labourer with wife and children, the wife fell ill, and had distinct diphtheritic exudation on her tonsils, whilst two of her children suffered from mumps; as the diphtheria outbreak subsided, mumps became more prevalent."

This calls to my mind a case* brought under my

* "Paget's Surgical Pathology," 3rd Edition, page 373:— "One of the crew of H.M.S. Rattlesnake, after slightly wounding his hand with a beef-bone, had suppuration of the axillary lymphatic glands, with which typhoid symptoms and delirium were associated, and proved fatal. His illness began the day after the crew left Sydney, where all the crew had been remarkably healthy. A few days after his death, a sailor who washed his clothes had similar symptoms of disease in the axilla, and for four or five months he suffered with sloughings of portions of the areolar tissue of the axilla, arm and trunk on the same side. Near the same time, a third sailor had diffuse inflammation and sloughing in the axilla; and after this the disease ran, *in various forms*, through the ship's company, between 30 and 40 of whom were sometimes on the sick list at once. Some had diffuse cellular inflammation, some had inflammation of the lymphatic glands of the head, axilla, or lower extremities; one had severe

notice by Sir James Paget, and which is recorded by him in his "Lectures on Pathology," 3rd Edition, p. 373.

In his letter to me, Sir James says: "Professor Huxley told me an excellent instance in evidence of the changes and various influences of one poison. It is the more significant, because all the patients were in as nearly as possible the same circumstances."

"Dr. Meredith particularly calls attention to the association between this outbreak (to which he has just referred) and sewer gas, which was excessively abundant in the case in question. This relation between mumps and diphtheria may be taken as an example of the class where two diseases appear to (I would say—do) emanate from a common source. But a further and more important instance of this (accords) with a distinct enunciation of a principle advocated on several recent occasions."*

"Dr. Meredith writes:—'On the 17th of July I reported an outbreak of scarlet fever in a house in the town. The sufferers were three children: there had not been any scarlet fever in the district, before this, for a long time, nor had the children been in contact in any way with a case of the kind, either directly or indirectly. As the illness presented some

idiopathic erysipelas of the head and neck; another had phlegmonous esysipelas of hand and arm after an accidental wound; others had low fever, with or without enlargement of glands. Finally the disease took the form of mumps, which affected almost everybody on board. The epidemic lasted from May to June. The ship was at sea the whole time, and, in the greater part of it, in the intense cold of a southern winter."

* This is the principle which I have advocated in public since 1875—the principle of unity and differentiation.

exceptional features, the inference is that *it was evolved from co-relative disorder, probably diphtheria*, for the children were exposed to this a few days before they fell ill."

This interchange, convertibility, and intercommunicability, prove unity of origin, as I have shown in my former papers.

Your reviewer adds—"These are very marked examples of a rapidly accumulating class of cases which tend to force a conviction that the old hard and fast lines of 'specific disease' will have to be modified. It is only in recent years of scientific investigation that a specificity of forces has had to make way for the doctrine of 'correlation of forces,' and the road appears to be clearing for the acceptance of the correlation of diseases."

In no book have I received more important confirmation of the great truth, Unity of Poison, differentiation of resulting phenomena—symptoms—which are but the outward and visible signs of the inward evolutions and development—evolutions which, in divers persons, at different times and under divers circumstances, produce diverse manifestations

I trust in my next paper to show how this diversity in an original unity may take place, and thus to show that the modern germ theory, or rather the old theory revived, is not opposed to unity and differentiation, nor this latter antagonistic to the former.

[There is a very important distinction between the views we have advocated and those referred to by Dr. de Gorrequer Griffith. If we understand him aright, he, starting from diversity, destroys all distinctive characteristics to arrive at a unity of poison.

We, on the other hand, starting from an original unity, trace the origin and development of species, and watch the struggle for existence to note the survival of the fittest.—Ed. *M. M. M.*]

In your issue of May 1st there is appended to my paper on the above subject these editorial remarks:—"If we understand Dr. G. de Gorrequer Griffith aright, he starting from diversity, destroys all distinctive characteristics to arrive at unity of poison. We, on the other hand, starting from an original unity, trace the origin and development of species."

We may prove this truth, Unity and Differentiation, as I have said in another paper, by analysis or katalysis, as well as by synthesis; that is, by taking the unity, and tracing its differentiations, or taking the differentiations and tracing them back to their common ancestry, the one *fons mali*—the one source whence all have sprung. Differentiations which converge and meet in a common centre—in a common source, prove unity. By these two methods this tracing back, through a series of differentiations, to a common ancestry, as well as forwards from a common or unity birth, a common parentage,—I have sought, and seek to establish to the satisfaction of other minds this great truth—Unity and Differention. I do both: I prove my case from unity and differentiation, and from or through difference back to unity. I do not "destroy all distinctive characteristics;" I unravel, so as to give each its due place in the complete, each its position as part of a great unity. Understand, I destroy nothing, I make each fulfil its allotted differentiation. To me, this truth is like a picture puzzle. I take the different parts (the differentiations of a one whole), huddled to-

gether, and mixed promiscuously, apparently in hopeless confusion. I study each part separately in its individualities; next, in its bearings to other parts; then, the several parts in their mutual relationships; and so on, till I find the bearings of each and all, and their places in the great whole, till the picture puzzle is fitted together complete, and the different parts which were in apparent inextricable confusion are placed so as to be manifestly parts of a whole—units or differentiations of a unity. This I term proving the doctrine by synthesis. But I also take the picture, the one unity, and taking it to pieces, I note each piece, and all the pieces, and observe, that, separate and differentiate them as I will, they are still—though they may be broken up infinitesimally—parts of a whole, no matter how infinitesimally they may be fragmented or differentiated.

See that heap of tiles, some large, some small as they can well be; there is a number of men busy around them; they are workmen. Every tile is a distinct piece, every piece a distinct color; there are many colors, many shades of colors, What confusion! Yet the skilled workmen take each varied-tinted tile, and set it by its fellow, making every color, every shade of color, harmonise; for he has before him a picture which stands complete the *chef d'œuvre* of a master artist, which he has studied carefully, and the confused mass of tiles is to him but the differentiations of various colors and tints which his trained eye can readily detect; and recognizing them as parts of a great whole, each and all are made to harmonise into one, and the counterpart of the great painting is produced, and the beautiful differentiated mosaics are worked into a unity, a magnificent unity of differentiations. Such is synthesis. Reverse the

order; take to pieces the unity; resolve it into differentiations, and you have analysis or katalysis.

In the endeavour to prove unity, &c., I am borne out by the laws of physical science, as my friend Hyde Clarke has pointed out to me, and as I shall in another paper demonstrate from some of Tyndall's writings and experiments. You say:—"If we understand Dr. Griffith aright, he, starting from diversity, destroys all distinctive characteristics to arrive at a unity of poison." No; as I have just shown, I have taken a one poison and watched its behaviour on a large number of individuals, placed as nearly as it is possible for them to be, in the same conditions, circumstances, &c., and found, that from the one unity, from the one source, a vast variety of diseases —ordinarily looked upon as separate and distinct— have been propagated or evoluted, and that in their propagation or evolution they have altered so completely that the original poison, the common ancestry, is unobservable save by the patient and close investigator, and is lost sight of except by one having strongly in his mind the differentiations which occur.

Bearing this law of unity, &c., in mind, *the *alteration in propagation, the alteration in generation, the interchange and intercommunicability and hybridity*, can be understood, when otherwise they could not be.

I do not in my papers on this subject speak of these evolutions of the one origo as separate and distinct diseases, but as varying symptoms, outward expressions of the inward evolutions of that poison whence all proceed. Who would think that, as in

* I am very strongly borne out in this by an article in the *Lancet* (May 26, 1883), by Dr. Meredith.

the case I brought forward in your May number, and kindly contributed to me by Sir James Paget, that from the pricking of the hand with a beef bone resulting in axillary abscess, typhoid symptoms, delirium and death—a wide range of maladies, climaxing in an epidemic of mumps—would be developed in a variety of persons? Yet I can shew, and have shewn, even wider ranges than in this case, to which Professor Huxley and Sir James Paget both testify; and I believe every medical man, *who has turned his attention to this subject*, can do the same.

What is to hinder the same poverty, filth and dirt—conditions and circumstances from developing *de novo* in different persons at different times—meterologic and climatic, and other states being taken into consideration, typhus, typhoid, variola, or other, and other, as "dissimilar diseases?" * I use the phrase as it is the present mode of expression. What is to hinder the same poverty, filth, and dirt conditions from developing *de novo* in different persons at the same time typhus, typhoid, variola, and a variety of diseases usually looked upon as utterly dissimilar in every way, in origin, &c., &c.? And yet I contend that if you take a set of conditions, or a virus which will originate one, the same set of conditions and the same virus which originates the one, will be found—if this problem be accurately investigated—to produce others apparently *so dissimilar as to lead the casual observer to consider them entirely distinct* —one they are in birth, one in origin, differentiate as they may subsequently. And who cannot call up cases in his experience, confirmatory of this truth? I do *not* deny or attempt "to destroy all

* See Miss Nightingale's "Notes on Nursing."

distinctive characteristics to arrive at a unity of poison;" but throughout all my writings on the subject I seek to show that the "distinctive characteristics" are not necessarily separate and distinct poisons, but are "characteristics," or expressions, or evidences, or symptoms of "distinctive" workings or phases of evolutions in the development of the one and the same poison, and "distinctive" of those various evolutions; *the distinctiveness* (which I uphold most emphatically) *being the very proof of the differentiation, and the amount of that differentiation from the common unity point*—the unity of origin.

I maintain, that to give these "distinctive characteristics" names, as if they were, and under the supposition that they are, distinct diseases, and as if each proceeded from a separate and distinct virus, and had no connection whatever with each other, is misleading.

In this Unity and Differentiation, and the Evolution of a variety of sets of symptoms (diseases) from one common ancestry, and the Evolution of a different set, or different sets of symptoms (diseases), from one set of symptoms (disease), apparently quite different from them, I am fully corroborated by Sir James Paget's recent Bradshawe Lecture; also by his address on "Collective investigation of Disease," and by that of Sir Wm. Gull on the same subject.

[Dr. Griffith has misunderstood us. He has failed to grasp the view which we have enunciated. He regards these "diverse diseases" as casual manifestations of one poison. We regard them as low *species*, and apply thereto the doctrine of the origin of species. We agree with Dr. Griffith in so far that we think that the same cause may produce divers manifestations or "diseases," according to the circumstances under which it operates. But we believe that the poisons causing these manifestations, so produced,

tend to propagate themselves *in specific identity*, acquiring with each succeeding generation more pronounced specificity, and that where they fail to do so, and yet survive, transmitting some hybrid "disease" instead of propagating their kind, it shews the survival of the fittest, viz., of the one which failing to find the circumstances it requires, has sufficient vitality to enable it to "adjust itself to its environment" (H. Spencer). Dr. Griffith denies, if we understand him aright, any "specificity" in disease, and would apparently throw* *all* the determining faculty as to the manifestations that shall ensue upon the introduction of the poison, upon the circumstances under which, the soil in which, or the pabulum on which it falls, exists. This appears to us to be merely reversing the position of the "specificists," who throw all the determining faculty upon the poison itself. The view we advocate takes the middle course, and admits two tendencies: (1) The operation of the inherent nature of the poison leading it in a certain direction, comparable to the hidden force of the egg which initiates and carries out the process of germination from the segmentation of the yolk to the completion of the chick; and (2) the operation of the environment upon the poison itself, which may either (*a*) succumb to the inherent force of the poison; (*b*) modify the action of the poison producing a mere variation, or (*c*) impress a new character upon the poison which shall become a permanent variation, and shall tend towards the evolution of a new species of poison germ.—Ed. *M. M. M.*]

Sir,—Allow me a short space to refer to your Editorial remarks appended to my paper on the above subject in your number for July. 1st: My copyist omitted to put what I always have as a footnote to the heading, and the omission may lead some to suppose I consider that there is one poison only for all diseases. This would be an error: as the footnote to which I refer in itself proves:—"By unity is meant, not that the poison is always the same, but that the one poison—the one *origo mali*—whatever it may be, will originate several so-called different affections." 2nd: The word "casual," which you use in your sentence—"He regards these 'diverse diseases' as *casual* manifestations of one poison"—is so far correct, inasmuch as it *is* impossible to predicate for certain what *exact* symptoms will result from exposure to any virus or contaminating influences,

* See page 4—"This bears out," &c.

or disease-originating agencies, an uncertainty of foretelling, arising from intricacies of environment, subtleties of action, correlative or otherwise, idiosyncracies, adaptability and adaptation of the exposed; the impossibility of saying how the poison will behave itself, and what will be the behaviour of the elementary factors of disease when combining among themselves, what the result of their combinations—not only *inter se*, but with those other agencies, of which account must be taken, and the influences of other circumstances over and above those I have named, and which we must designate an unknown, and, I fear, an unknowable "quantity." We must also bear in mind the alterations among themselves in the combining proportions, and also the alterations in combining with the bodies and agencies other than themselves with which they are brought into relation; the formation on the part of the original elementary factors into multiples of their first combining proportions, the reduplications of those multiples, the origin of "complications" in disease as a result of this, and of the origination of fresh compounds on the part of the primordial factors —fresh compounds, because of new combinations among themselves, and among those agencies, &c., in the persons affected—compounds made anew and anew as they go on evoluting and determining, determining and evoluting, combining in new proportions, and again evoluting and throwing up new symptoms of action, and it may be *even quite new* symptoms, such as have not previously appeared—a new disease, in fact, as would be said in current phraseology.

I fear from the following sentence which you have used:—"We believe that the poisons causing these manifestations, so produced, tend to propagate themselves *in specific identity*, acquiring with each succeeding generation more pronounced specificity," —that your readers would think I hold, that like never produces like. I hold that like will produce like, and in my Tyndall paper, which I have ready for publication, I explain how and when such may occur. Suffice here to say: how seldom like produces exactly like! and how exactly alike must be all the conditions in order for like to beget like. I agree that there is a power of "adjustment to environment"; but frequently—if not always—this process is attended with changes—the very adjusting causes change Pasteur *grew* the chicken-cholera organism *for a long time* in hope of *diminishing its infective*

power; he found that it then produced *a modified disease*,—like not producing like.

I should like to know your definition of "specificity." If it be that like always produces like, and can always produce like, and that a set of symptoms (a disease) is specific, because it will always produce the same—and nothing else—its exact self—no variations, plus or minus; then I hold, no disease (set of symptoms) is truly, or even at all, specific. There is, it is true, no possibility of altering the egg in the way you refer to after it is laid, but we are hardly in a position to say what might be affected by experiments as to fertilising the ova. I do hold there *is* "an inherent nature," a *vis insita*, which has been implanted, an* inherent force, possessed of an attractiveness for suitable environments, and an attraction to them—"operations of the inherent nature of the poison leading it in a certain direction," as you express it—and that such vis causes, what is termed, perpetuation of like. I advocate strongly "the operation of the environment upon the poison itself" (your words), but hold that this very "operation" may cause a succumbing of the vis insita which, as you say, will "modify the action of the poison, &c.," while at another time the environments may be overmastered, as it were (made to "succumb," to use your word), "timely accumulations," as Tyndall would say, of the vis insita taking place, so that a force—even though weak—repeated repeatedly will produce accord and unison, and by this very attuning will accomplish what a great force—"out of relation"—would fail to effect. No doubt whatever but (*b*) that environment, &c., will produce variation, and (*c*) that it "will," as I have said in the forepart of this letter, and as I show in a paper, the MS. of which I finished some time since, "will impress a new character upon the poison (the original poison), which will become a (more or less) "permanent variation, and shall tend towards the evolution of a new series of poison germ" (you have it), of disease (or set of symptoms), dependent upon alteration in the poison. I believe new diseases (sets of symptoms) are being daily evoluted; "new quantities," unknown to our forefathers, being the cause of such evolution.

I am, yours faithfully,

G. DE GORREQUER GRIFFITH.

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* See page 4.